CLAIMS:

1. A phenylethanediol derivative, characterized in that the phenylethanediol derivative comprises at least one photo-convertible group suitable for adjusting the helical twisting power of the phenylethanediol derivative.

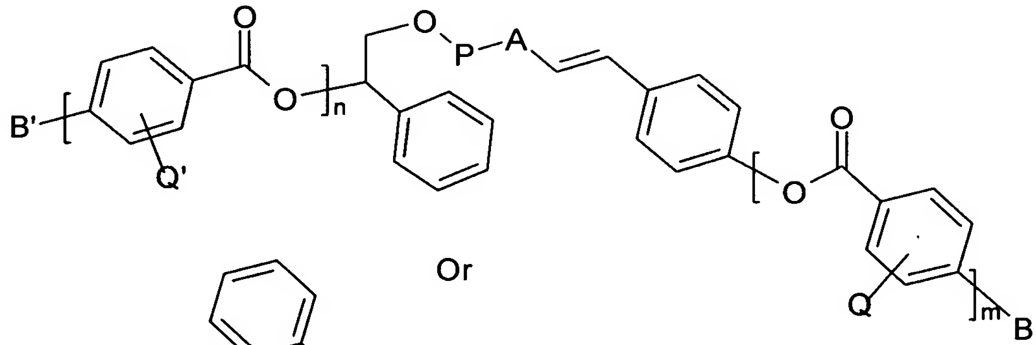
2. The phenylethanediol derivative of claim 1 further having at least one polymerizable group.

3. The phenylethanediol derivative of claim 1 or 2 wherein the photo-convertible group is a photo-isomerizable group.

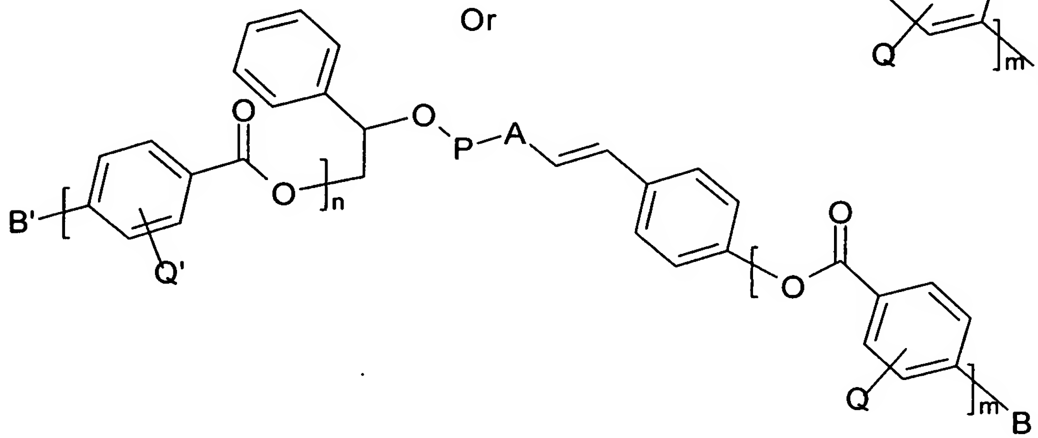
4. The phenylethanediol derivative of claim 3 wherein the photo-isomerizable group is an olephinic group.

5. The phenylethanediol derivative of any one of claims 1-4 wherein the polymerizable group is a (meth)acrylate group.

6. The phenylethanediol derivatives of any one of the preceding claims wherein the phenylethanediol has the formula



Or



wherein

A stands for a bond or a p-phenylene group;

B and B' are independently $(O)_p$-C_oH_{2o}-O-CO-CR'=CH_2, o being 2-12, p being 0 or 1, and R' being H or CH_3;

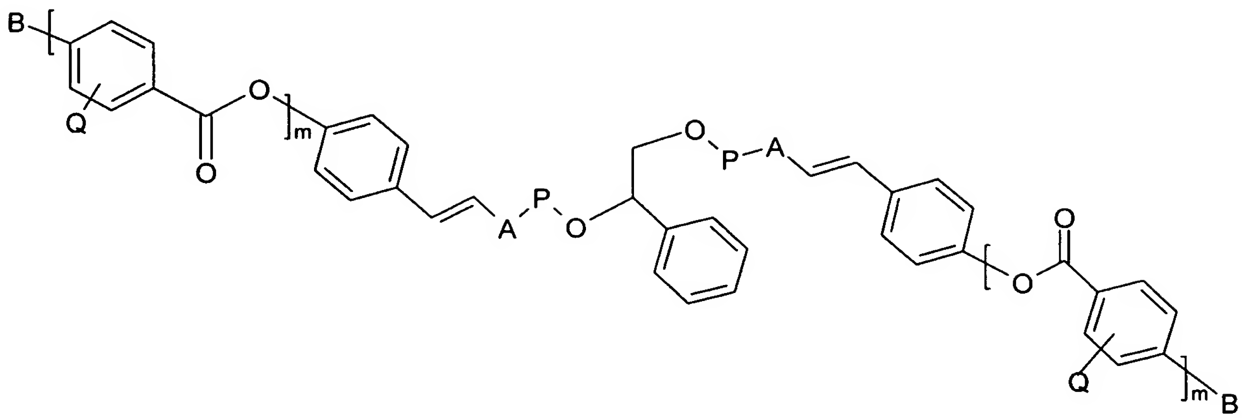
P stands for a CH_2 or a C=O group;

Q and Q' are independently selected from H, C1-C3 alkyl, C1-C3 alkoxy, halogen, and CN;

n is an integer from 1 to 3; and

m is an integer from 0 to 2.

7. The phenylethanediol derivative of any one of the preceding claims wherein the phenylethanediol has the formula



wherein

A stands for a bond or a p-phenylene group;

B is $(O)_p$-C_oH_{2o}-O-CO-CR'=CH_2, o being 2-12, p is 1, and R' being H or CH_3;

P stands for a CH_2 or a C=O group;

Q is selected from H, C1-C3 alkyl, C1-C3 alkoxy, halogen, and CN; and

m is an integer from 0 to 2.

8. A method for the preparation of the phenylethanediol derivative of claim 1 by the steps of a) synthesizing a 2-hydroxy ether-protected phenylethanediol, b) followed by etherification or esterification of the 1-hydroxy group of the 2-hydroxy ether-protected phenylethanediol with an alcohol (or derivative thereof) or acid, respectively, optionally comprising polymerizable and/or photo-convertible groups, c) then cleaving the ether-protective group to obtain a phenylethanediol derivative with a free 2-hydroxy group, and optionally d) esterification of the free 2-hydroxy group with an acid which optionally comprises one or more polymerizable and/or photo-convertible groups.

9. A cholesteric composition comprising the phenylethanediol derivative of any one of claims 1-7.

10. An optical element, preferably an optical color filter, comprising the phenylethanediol derivative of any one of claims 1-7.

11. Use of the phenylethanediol derivative of any one of claims 1-7 in optical elements.